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Research Article

POSSIBILITIES OF LAPAROSCOPIC CHOLEDOCHOLITHOTOMY.

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Abstract:

In this article is considered the treatment of 51 patients with choledocholithiasis. Of these, 45 (88.2%, n = 51) patients were underwent a one-stage laparoscopic cholecystectomy, with choledocholithotomy. In 4 cases, when using choledochoscopy, after removing stones from the duct, a blind suture of the common bile duct was overcasted without drainage. In 6 cases of residual choledocholithiasis, choledocholithotomy with drainage of the common bile duct was performed. In cases of choledoch drainage 28 (54.9%, n = 51) patients were performed by drainage through the stump of the cystic duct, 19 (37.3%, n = 51) patients through the choledochotomy opening in the distal direction. In the postoperative period, bile leakage was developing in 5 (9.8%, n = 51) cases. Bile leakage occurred in patients with choledoch drainage through the choledochotomy opening and stopped conservatively in the period from 3-4 days to 2 weeks. In one case, on the second day after the operation, biliary peritonitis developed due to loss of choledoch drainage, which required relaparoscopy, sanation and drainage of the abdominal cavity, recholeostomy. In 3 (5.9%, n = 51) patients with multiple choledocholithiasis in the postoperative period after performing fistulogarfia, single left calculi were revealed in the common bile duct. In this connection, in both cases an endoscopic papillosphincterotomy and lithoextraction were required, and in one case a repeated laparoscopic choledocholithotomy was performed 2 months after the first operation. Successful laparoscopic choledocholithotomy can improve the postoperative period and DECREASE hospitalization.

Key words: choledocholithiasis, laparoscopic choledocholithotomy, choledochoscopy, drainage of the common bile duct, balloon dilatation of the duodenal papilla.

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INTRODUCTION:

Among the complications of cholelithiasis, choledocholithiasis occupies one of the most significant places and is about 3-15% of all cases of cholelithiasis [1]. Surgical treatment of choledocholithiasis is necessary to prevent further serious complications, such as cholangitis, liver abscesses and acute pancreatitis [2]. Modern endoscopic and laparoscopic technologies have led to the emergence of minimally invasive methods for removing stones from the bile ducts [3]. Currently, several tactical approaches are used in the care of such patients [4]. At the dawn of the use of laparoscopic technologies in the treatment of cholelithiasis, with the development of choledocholithiasis, either an open choledocholithotomy with one of the common types of external drainage of the common bile duct was performed, or patients were referred to retrograde cholangiopancreatography and papillosphincterotomy with lithoextraction. These two approaches are applied nowadays [5]. However, cases of open choledocholithotomy combine high invasiveness of operations and the possibility of developing residual choledocholithiasis, ranging from 4 to 18% [6, 7, 8]. In cases of retrograde cholangiopancreatography and papillosphincterotomy with lithoextraction, the disadvantages are its two-stage approach, the destruction of the Oddi sphincter and the inability to remove large stones more than 1.5 cm in diameter [9]. With the accumulation of experience in laparoscopic interventions, it is now increasingly being said about the use of single-stage laparoscopic interventions: cholecystectomy and choledocholithotomy with various common types of bile duct drainage [10, 11]. The purpose of this retrospective study was to report on the results of laparoscopic treatment of common bile duct stones in a monocentric series of 51 patients.

MATERIALS AND METHODS:

In the period from January 2013 to September 2019, at the Simferopol Clinical Hospital and the Republican Clinical Hospital named after N.A. Semashko, 51 patients with choledocholithiasis were treated. Of these, 43 (84.3%) were women and 8 (15.7%) were men. The average age was 51 years (from 33 years to 80 years). In 45 (88.2%, n = 51) cases there were gallbladder stones with choledocholithiasis: 11 (21.6%, n = 51) cases with acute destructive cholecystitis, of which 7 (13.7%, n = 51) cases with acute cholangitis and 34 (66.7%, n = 51) cases with chronic cholecystitis. Including 2 (3.9%, n = 51) cases of Mirrisi syndrome. There were also 6 (11.8%, n = 51) patients with residual choledocholithiasis, 5 (9.8%, n = 51) of whom, after

previous cholecystectomy, and 1 case after laparoscopic cholecystectomy with choledolithotomy for multiple choledocholithiasis. In 25 (49.0%, n = 51) cases developed an obstructive jaundice and in 5 (9.8%, n = 51) cases occurred acute pancreatitis accompanied by severe girdle pain in the epigastrium and an increase in blood amylase level. From the entire group, Before surgery, all patients underwent ultrasound examination of abdominal organs and 45 (88.2%, n = 51) patients underwent magnetic resonance cholangiography, which allowed not only to determine the presence of choledocholithiasis, but also to indicate the number and localization of stones in the ducts. All patients underwent laparoscopic choledocholithotomy using a Dormia basket and a Fogarty catheter. Including in 14 (27.5%, n = 51) cases, fibro-choledochoscopy was used, which allowed not only more reliable revision of the bile ducts in the proximal and distal directions, but also litho-extraction, introduced through the instrumental channel by the Fogarty and Dormia catheters. External bile duct drainage through the cystic duct is 28 (54.9%, n = 51) cases and through the choledochotomy opening in the distal direction is 19 (37.3%, n = 51) cases. In 4 (7.8%, n = 51) cases, a blind seam of the common bile duct was drained without drainage. In combination with gallbladder stones, a cholecystectomy was performed a priori. In the postoperative period, all patients underwent fistulography (cholangiography), at the beginning of mastering the technique at the 7-9th day in recent years AT THE 3D-4TH day after surgery.

RESULTS AND DISCUSSION:

In 48 patients (94.1%, n = 51), removal of bile duct stones was successful with laparoscopy. The average diameter of the common bile duct was 12.5 mm (range 10-20 mm). The average number of stones in the ducts was 5 (from 1 to 18). The average surgery time was 150 minutes. (Range 90-255 min.). There was no transition to conversion in any case.

The operation was always performed from five ports. In cases of combination with cholecystectomy after clipping of the cystic duct directly at the neck of the bladder, clipping and intersection of the cystic artery, longitudinal choledochotomy was performed, the length of which depended on the size of the stones revealed by ultrasound or tomography. The average size of the stones was 11mm (from 4mm to 20mm). In cases of single large calculi, the removal of stones was not particularly difficult. There were 30 such patients (58.8%, n = 51), of which 6 were patients with residual choledocholithiasis.

During the audit of the bile ducts with Fogarty probes

of various diameters from 1.8 mm to 3.5 mm, a large duodenal papilla always went through, performing its bougie and then bologna dilatation, which in our opinion improved the course of the postoperative period and reduced the duration of bile drainage. The control subhepatic drainage was always left.

In the postoperative period, bile leakage developed in 5 (9.8%, n = 51) cases, with bile flow rate by trapping drainage from 80 ml to 200 ml, without cocoa or generalization of the process and the absence of a peritonitis clinic, which allowed these patients to be treated conservatively. On control ultrasound examinations of the abdominal cavity, no fluid accumulations were detected. All cases of bile leakage developed in patients with drainage of the common bile duct through the common bile duct. 2 patients on the first day after surgery and stopped over the next two weeks. In 3 patients, bile flow developed on the second day and stopped within 3-4 days, which, in our opinion, is associated with intraoperative bougienage and balloon dilatation of the duodenal papilla. After cessation of bile leakage, the drainage was removed.

In one case, on the second day after surgery, biliary peritonitis developed, for which relaparoscopy was performed. The cause of peritonitis was the loss of choledoch drainage, in connection with which recholedochostomy, rehabilitation and drainage of the abdominal cavity from two points of the subhepatic space and small pelvis were performed. The case ended with the patient recovering up to 14 days with removal of the choledoch drainage.

In all cases, drainage of the common bile duct through the cystic duct of bile duct was not observed. The trapping abdominal drainage was removed 3-4 days after surgery. In some cases, the installation of drainage required preliminary bougienage of the cystic duct with a Fogarty probe. The choledochotomy opening was sutured tightly. After fistulography was performed in 3 (5.9%, n = 51) patients with multiple choledocholithiasis, single left calculi were revealed in the common bile duct. In 2 cases, the stones were successfully removed using endoscopic sphincterotomy and lithoextraction. In one case, the patient was discharged with drainage of the common bile duct, and two weeks after discharge, the flow of bile on the drain itself stopped. After 2 months, the patient was again hospitalized in the surgical hospital, where preoperative fistulography was performed, and then laparoscopic choledocholithotomy with drainage of the common bile duct. Bile leakage in the postoperative period was not observed. Control fistulography was

performed 4 days after surgery. Drainage of the common bile duct was trained and gradually removed on the 7th day with subsequent discharge.

Of the 14 cases of performing irraoperative choledochoscopy in 4, after removal of calculi, a blind seam of the common bile duct was performed without leaving drainage. Only control drainage was left in the subhepatic space. In one of these cases, peritonitis was diagnosed on the first day of the postoperative period. Relaparoscopy was performed, and widespread serous-fibrinous peritonitis was revealed. A median laparotomy was performed: signs of acute pancreatitis, pancreatogenic peritonitis were revealed, the choledoch sutures were consistent. Produced choledochostomy through the stump of the cystic duct with the aim of decompression of the bile ducts, thorough lavage and drainage of the abdominal cavity. The case ended in recovery. There was no mortality. There were no other postoperative complications. All patients underwent early activation, with the exception of cases of bile duct and peritonitis. After the operation, no pronounced pain was noted, anesthesia was carried out by non-narcotic analgesics for the first two days 1-2 times a day, which favorably affected the course of the postoperative period. The average of postoperative hospital stay was 9.7 days (from 7 to 14 days).

CONCLUSIONS:

In 94.1% of patients, treatment of choledocholithiasis can be achieved laparoscopically, which is a promising method due to the preservation of the anatomy and functionality of the duodenal papilla.

In addition, the use of intraoperative bougienage and balloon dilatation of the duodenal papilla allows to reduce the patient's stay in the surgical hospital.

The use of intraoperative choledochoscopy allows not only to increase the efficiency of removing stones from the ducts, but also to complete the operation without drainage of the bile ducts in cases where there are no clinical manifestations of biliary hypertension, which also reduces the time of patient's hospitalization.

However, endoscopic papillosphincterotomy is still necessary in cases of failure of laparoscopic treatment of choledocholithiasis.

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